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The JOURNAL *of the Oklahoma State Medical Association*

Volume 47 **MAY 1954** Number 5

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Editorials

Lay Publicity in Action

Perrin H. Long's address in Tulsa February 15 before the Oklahoma Academy of General Practice promptly made news. The February 16 *Daily Oklahoman* headline reads, "Doctor Warns Miracle Drugs Can Be Deadly". Space will not permit a full discussion. Suffice it to say that while the *Journal* finds no fault with the reporter and her reporting, the fact remains that the unqualified statements leave the public with only half the truth.

The explanation appears in an editorial appearing in the *Journal* of March, 1954, titled "The Matter of Lay Medical Publicity".

The justifiable caution should have been accompanied by the significant fact that largely on account of these same new drugs in the past 15 years, morbidity and mortality have been greatly reduced. To cite only one example, pneumonia, one of the greatest killers of the past, is now practically non-existent as a cause of death.

Before Doctor Long spoke in Tulsa, the editorial "Drug Addicts" referring to the fact that physicians may become addicted to overprescribing in the presence of miracle drugs, was in the February *Journal*.

Though the unwarranted and promiscuous prescribing cannot be condoned, we must insist that it is unfortunate that the publicity was not accompanied by the full truth showing that any damage resulting from over-prescribing cannot compare with the good accomplished by the new drugs. The number of lives lost is insignificant compared with the number saved.

Maryland Indebted to Oklahoma

The University of Oklahoma Medical School's Robert H. Riley, who graduated in the class of 1913 has been cited for unusually meritorious service in public health.

At the November 5, 1953, convention in Washington, D. C. the Association of State and Territorial Health Officers "honored Dr. Robert H. Riley, Director of the Maryland State Department of Health, with the 1953 Arthur T. McCormack Award. . . Dr. Riley has been Director of the Maryland State Department of Health for the past twenty-five years. He has been instrumental in successfully guiding the course of public health in Maryland during this period which has seen some of the greatest changes in the field of health administration. Prior to this time Dr. Riley served as Assistant State Health Officer of Oklahoma."[1]

Oklahoma is proud of Robert H. Riley. Through his service in public health his influence in the cause of human weal will live long after he hands over "the lamp of life".

[1]Baltimore Health News. Published monthly by the Baltimore City Health Department. Vol. XXX, No. 12, December, 1953.

Needle Biopsy of the Liver

In the August *Journal* (1952) there is an editorial under the above title. Briefly it discussed indications, diagnostic efficacy, dangers and the importance of standard technique.

In the *New England Medical Journal* Norman Zamcheck and Richard L. Sidman[1] under "Medical Progress" discuss the procedure in two issues of the Journal: 1. Its use in clinical and investigative medicine and 2. The Risk of Needle Biopsy.

Those who read and heeded the principles set forth in the previous editorial are in line with progress as reported. For the benefit of our readers we lift the author's conclusions from *New England Medical Journal* and recommend this report with its long list of references to all who are interested in this important diagnostic method:

"A review of 20,016 needle biopsies of the liver indicates clearly that at present this is the most useful adjunct available for the diagnosis of clinical liver disease. In the hands of unqualified persons, misled by its apparent simplicity, the procedure is hazardous, but, when performed by experienc-

ed personnel, it is remarkably safe, having a true mortality of less than 1:1000. The proper use of needle biopsy can save many lives by permitting early diagnosis and prompt institution of correct medical or surgical therapy."

New England Journal of Medicine. Vol. 249, Nos. 25-26 (December 17 and 24) 1953. Pages 1020-29; 1062-69. Norman Zamcheck, M.D., Richard L. Sidman, M.D. and Oscar Klausenstock, M.D.

Hospitals in the Practice of Medicine

The following contribution by P. E. Russo, M.D., opens an old wound. Since the subject is a controversial one, it deserves editorial notice. Any member desiring to comment on the statement presented by Doctor Russo should address the Editor or any member of the Editorial Board:

"I am submitting for your consideration the following statement with reference to the new Health Insurance contract for the meat packing industry. The health insurance contracts for the meat packing industry do not permit *'free choice of physician and fee for service.'* The contract distinctly restricts professional services in radiology, pathology, anesthesiology and physiatry to services 'when rendered by a salaried employee of a hospital.' This excludes such professional service when rendered by a physician in his office or by a physician conducting a private practice of these specialties in a hospital on a fee for service basis. Such restrictions of professional services to those rendered by an employee of a hospital are sinister influences undermining a private practice of medicine and promoting the progressive institutionalization of medical practice in hospitals.

"The restriction of benefits for professional services to 'when rendered by a salaried employee of a hospital' and the implication that these represent hospital care rather than medical practice are being encountered more and more frequently in the health insurance contracts of insurance carriers. It is particularly difficult to correct the policies of such private insurance companies in which our profession has no representation or voice. The Oklahoma Blue Cross accepted the 'Swift Contract' which contains such restrictions and was put into effect December 6, 1953.

"It is recommended that our Medical Association go on record as definitely opposed to the restriction of any Blue Shield or private insurance benefits for professional services to those 'rendered by a salaried employee of a hospital' and to insurance contracts which by implication tend to define radiology, pathology, anesthesiology or physiatry as 'ancillary hospital service'."

Coronary Disease

In the *British Medical Journal* of January 9, 1954, there is an editorial on "Coronary Disease and Work". The long considered riddles connected with this condition are still unsolved. Nobody knows why coronary disease is more common in professional groups than in other classes. On the whole current studies present insoluble paradoxes. Dr. J. N. Morris and co-workers in Britain find this is true. Their investigations of drivers, conductors and guards, aged 35 to 64, employed by the London Transport show that conductors have less coronary disease than the other groups, all in virtually the same social strata. This leads them to believe that lack of physical activity is a contributing factor. This doesn't explain the higher incidence in general practitioners than in consultants.

Admittedly the disease etiologically arises through both genetic and environmental influences. We would like to know about genetics. Before it is too late, the students of cardiovascular disease should tell us whether to be poor or rich, whether to be sedentary or physically active, whether to smoke and drink, what to eat and how much, whether to worry or not to worry and if it is within their power to be so merciful how to develop a rapidly fatal coronary thrombosis just before obvious senility sets in.

British Medical Journal. Coronary Disease and Work. January 9, 1954. Pages 86-87.

Scientific Articles

CERVICO-FACIAL ACTINOMYCOSIS

DAN E. BRANNIN, D.D.S., Tulsa

THE AUTHOR

Dan E. Brannin, D.D.S., M.S.D., Tulsa oral surgeon, has a paper on "Cervico-Facial Actinoomycosis" in this issue. Doctor Brannin received his B.S. degree from Oklahoma A. and M. in 1946 and his D.D.S. from the University of Kansas City in 1950. In 1952 he was granted his M.S.D. from the University of Minnesota with a major in oral surgery and a minor in oral pathology.

Actinomycosis is a disease which occurs with relative infrequency in man. Clinically, it is characterized by suppuration, the formation of granulation tissue, fistulas, sinuses, and by the presence in the pus of yellow granules, the so-called "sulfur granules."[1] Three areas of the body are most commonly affected in approximately the following percentages: thoracic 14 per cent, abdominal 8-18 per cent, and cervico-facial 60 per cent.[1] In reference to the last, Burket[2] states that the submaxillary region is the most frequent site of involvement in cervico-facial actinomycosis. There is characteristically a slowly progressive swelling of the cheek or neck which is indurated in nature. As the disease progresses, foci of suppuration develop which tend to form chronic sinuses through which pus containing sulfur granules escapes. The skin in the area about the drainage sites is described as possessing a characteristic bluish or violaceous color.[4] Actinomycosis of the submaxillary area is easily confused with osteomyelitis. In osteomyelitis, however, the pain is more severe, there is greater destruction of bone, and suppuration occurs more quickly.[3] In addition to osteomyelitis, one must differentiate from many diseases such as syphilis, tuberculosis, and malignancy.

The infective organisms are anaerobic fungi belonging to the group, Actinomyces. They are gram-positive, filamentous organisms which are probably strict parasites.[2] Most workers believe that there are two pathogenic types of Actinomyces: Actinomyces israeli, which causes most infections in man; and Actinomyces bovis, which is the etiological agent in bovine infections but may be the insulting organism in man. Until recently it had been thought that human infections arose from contact with infected animals or contaminated plants. Hall states that at the present time there is little reason to cling to such a belief.[2] The organisms commonly reside in the human mouth in carious teeth, periodontal pockets, and tonsillar crypts. The mechanism whereby these harmless Actinomyces of the mouth invade tissues and lead to disease is not known. Thoma[6] states that they may enter through root canals, periodontal pockets, and oral wounds.

The positive diagnosis of actinomycosis can only be made from isolation of anaerobic Actinomyces from infected tissue or pus by curvature.[5] The presence of "sulfur granules" while helpful is not diagnostic. Other microorganisms may cause the formation of such structures by forming a matrix about which lime salts are deposite. In actinomycosis these granules are actually colonies of the fungus.[1] The demonstration of mycelial fibers within a granule is highly suggestive but not conclusive. Nocardia, for example, also presents such a picture. Biopsies of the wound frequently reveal only granulomas and suppuration. Most laboratories, however, are willing to make a presumptive diagnosis of actinomycosis if sulfur granules are present and if gram-positive mycelia can be demonstrated in these granules.

The treatment of actinomycosis in recent years has been revolutionized. Iodides, x-ray therapy and the sulfa drugs, combined with radical surgery were employed but

FIG. 1. Preoperative appearance of patient. The right submandibular swelling is plainly visible.

FIG. 2. The right submandibular area 30 days postoperatively.

FIG. 3. The right submandibular area three months after initiation of treatment.

these yielded little success. However, the antibiotics penicillin and more recently, aureomycin and terramycin, have demonstrated effectiveness in the treatment of the disease. Incision and drainage followed by curettage in combination with large doses of penicillin for three to six weeks is the treatment most universally employed at the present time. Cervico-facial actinomycosis has demonstrated itself to be responsive to this therapy and numerous cures have been reported.

Report of a Case

Mr. A. M., a 43-year-old postal clerk, was admitted to the hospital, September 2, 1952, complaining of a painful swelling just inferior to the right lower jaw.

History: Approximately two and one-half months prior to admission the mandibular right molars were extracted. Following these extractions, the "lower jaw swelled" and incision and drainage was done. Two injections of penicillin and twelve oral tablets of penicillin were given. His condition improved until 10 days later when a "hard swelling like a hard rubber ball" developed in the right upper neck just below the mandible. He was admitted to a hospital and remained there for eight days during which time he received four injections of penicillin a day and application of warm moist packs externally to the swelling. His condition improved considerably but the swelling did not completely resolve. He was discharged, however, from the hospital and informed that he could expect the swelling to disappear completely within a few days.

A further medical history revealed no additional contributory information and was essentially negative except for a stated intolerance to fatty or fried foods.

Examination: The patient was a well developed, well nourished 43-year-old postal clerk in no distress. Physical examination demonstrated no abnormality except for that associated with the right lower face and upper neck. A reddish-blue, raised, fluctuant mass approximately two centimeters in diameter was present in the right submandibular area. (Fig. 1) It was movable, apparently unattached to the mandible, non-painful, and non-tender to palpation. Palpation of the cervical lymph nodes revealed no deviations from normality. Intraorally, the examination was negative except for some slight increased tenderness in the right mandibular muco-buccafold. The previous extraction sites were almost completely healed.

Repeated blood studies were done but the results of all performed were well within normal limits as was examination of the urine. Serology and heterophile antibody studies were likewise negative.

Treatment: The patient was given crystalline penicillin intramuscularly 100,000 units every four hours beginning immediately after admission to the hospital. On the day following admission, aspiration of the mass followed by incision and drainage was performed in the operating room under trichlorethylene analgesia. A 20 gauge needle was inserted into the mass and approximately one milliliter of sero-purulent material aspirated. This material was submitted for bacteriologic study. An incision approximately one inch in length was made directly over the point of greatest fluctuation and parallel to the inferior border of the mandible. Five to 10 milliliters of sero-purulent fluid was evacuated. Jelly-like granulation tissue was curetted from the area and portions submitted for microscopic study. The inferior

border of the mandible was visualized, but no defects in this structure seen. A Penrose drain was inserted into the wound and fixed in place with one 000 silk suture.

Close examination of the aspirated material revealed the presence of peculiar yellowish specks, presumably "sulphur granules." Examination of these granules under the microscope demonstrated them to be formed masses of gram positive mycelial fibers. A presumptive diagnosis of actinomycosis was made. Cultures later showed the organisms to be Actinomyces bovis.

Microscopic study of the tissue curetted from the wound revealed, "massive inflammatory infiltrate."

The postoperative course was uneventful. Continuous hot moist packs were applied for three days at the end of which time drainage had ceased. The drain was removed and the patient transferred to the medical service for completion of treatment. Penicillin was continued and given in increments of 300,000 units every 12 hours. The wound healed without further incident and the patient discharged 30 days after admission, apparently cured. (Fig. 2) He was seen three months later and no evidence of recurrence was found. (Fig. 3)

REFERENCES

1. Jordan, E. O., Burrows, W.: Textbook of Bacteriology, 14th. Ed., pp 599-615, W. B. Saunders Co., Philadelphia, 1945.
2. Hall, W. H.: Actinomycosis in Man, Surgical Staff Seminars, Minneapolis Veterans Hospital, 9:84-91, Sept. 5, 1950.
3. Burket, L. W.: Oral Medicine, pp. 498-501, J. B. Lippincott Co., Philadelphia, 1946.
4. Blair, V. P., and Ivy, R. H.: Essentials of Oral Surgery, 4th. ed., pp. 102-106, C. V. Mosby Co., St. Louis, 1951.
5. Miller, S. C.: Oral Diagnosis and Treatment, 2nd ed., pp. 154-155, Blakiston Co., Philadelphia, 1946.
6. Thoma, K. H.: Oral Pathology, 2nd. ed., pp. 848-851, C. V. Mosby Co., St. Louis, 1944.

DEVELOPMENT *of* CLINICAL AUDIOLOGY

JOHN W. KEYS, Ph. D., Oklahoma City

Audiology is the science of hearing. The scope and subject matter of this field, including as it does certain aspects of many academic disciplines, physiology, anatomy, medicine, psychology, electrical engineering, and speech, is so broad, that it is almost an impossibility today for one person to be an expert in every and all phases of the subject. It would be somewhat unusual to find an otologist, who normally is concerned with the pathological and medical aspects of hearing, to be also a trained teacher of the deaf, a specialist in speech reading, and a psychophysicist. Neither would one expect to find as a usual circumstance, a teacher of the deaf who had completed four years of medical school, a year of internship, and one or two years of residency in otology. However, in spite of the fact that it is very unlikely that any one person can become proficient in the entire field of audiology, it is possible for him to become a specialist in one and possibly two aspects of that field with at least a general acquaintance with the others.

Presented before the Rocky Mountain Speech Conference in Denver February, 1953.

THE AUTHOR

John W. Keys, Ph.D. wrote "The Development of Clinical Audiology" in this issue. Doctor Keys is director of the speech and hearing clinic, Crippled Children's Hospital, Oklahoma City. Doctor Keys had a previous article appearing in the December, 1953, issue of the Journal.

In this paper for purposes of discussion and since it will best serve our needs, we shall divide the field of audiology into three broad areas: otology, the medical science of hearing; clinical audiology, the measurement and evaluation of hearing; education of the deaf and/or the hard of hearing. Additional divisions and subdivisions could, perhaps, be made, but our principal concern here is with the growth and development of clinical audiology, so that additional classification does not seem to be necessary.

Each of the fields just mentioned, notwithstanding the fact that there is a certain amount of subject matter common to all these areas has its own sphere of respon-

sibility and each has professional integrity in its own right

As a matter of fact, it is only through the proper cooperation and careful integration of the medical, clinical, and educational services represented in these areas that the greatest benefits to the hearing handicapped can be achieved.

Causes for the Growth of Audiology

The development in the whole field of audiology in the past two decades has been a rapid one. There are certain basic causes for this development and perhaps it is important, at least historically, to review some of these causes which made possible, and in fact constitute, the foundation for the advancements in clinical audiology, the topic with which this paper will be primarily concerned.

The first great impetus to the field came with the development of the vacuum tube and its subsequent adaptation for use in various types of hearing testing equipment and somewhat later, in the hearing aid. We shall have more to say later about hearing testing equipment, but I should like to point out here that the vacuum tube hearing aid gave thousands of people a new lease on life. It provided the opportunity for countless numbers of hard of hearing children, who otherwise would have dropped out of school, to continue their education in a normal manner, and to take their place in a hearing society.

By the same token, thousands of adults were able to hold their jobs, maintain their self respect and carry on a normal life who might have been relegated to the sidelines to lead a life of non-productivity and misery. The hearing aid was truly a god-send to the hard of hearing and it awakened a general interest in the potentialities and possibilities of the use of amplification to aid those who have hearing losses — an interest which is still very much alive. In fact, the 14 or 15 years which have passed since the first vacuum tube hearing aid became a reality to the development of the new transistor aid now coming on the market, marks an era of progress that can scarcely be duplicated anywhere.

A second great contributing factor to the advancement of audiology came with the discovery of the anti-biotics. For the first time medicine had a really effective means of combatting middle ear infections. Their discovery did a great deal to stimulate the awareness of the scientist and the public that preventive measures were possible that could, to a large extent, eliminate otitis media as a prime cause of hearing loss in children.

The third development which proved to be a much needed stimulus for the field of otology as well as a new source of help for persons with otosclerosis (a disease in which there is an osseous growth in the middle ear which may impede, or in the advanced stage, prevent the movement of the ossicular chain) was the fenestration operation. Although the operation holds no benefit for those whose hearing loss results from other causes, the fact that operative procedures are now available for even one type of hearing loss gave tremendous encouragement to all.

It is hardly possible to evaluate the tremendous contributions of the aural rehabilitation programs of World War II toward the advancement of audiology. Thousands of soldiers were returned to normal life through the training received in centers at Deson, Borden, Hoff, and Philadelphia Naval Hospitals. The tremendous progress made by these men during their concentrated programs of speech reading, auditory training, and hearing aid instruction surprised even those who were intimately involved in the training procedures. The whole program drove home the point to everyone that the hard of hearing can and must be rehabilitated.

From an analysis of the records of the thousands of soldiers tested came valuable research contributions to the field. Concomitantly, programs of investigation were carried on at Harvard Psycho-Acoustic laboratory, Central Institute for the Deaf, and other places which developed more effective tools for testing hearing in the form of new tests, new equipment, and new procedures.

The advancements made in the area of psychological testing have also had a profound effect in audiology, as well of course,

as in the entire educational field. Particularly important has been the standardization of certain performance or non-verbal tests on deaf children. It is no secret to any of us that many acoustically handicapped children have been relegated to the ranks of the feeble-minded when careful examination by a competent psychologist could have demonstrated their normalcy in everything but hearing. Other tests, diagnostic in nature, have been devised which have aided greatly in improving our insight into the actual causes operating to interrupt the development of a child's communicative processes. Achievement and other types of tests are now available which allow a comparison of these children with their normal hearing playmates. All of this has given purpose, direction and validation to the educational training of these youngsters.

The last great influence in the field of audiology in recent years which I shall mention was the awakened interest on local, state, and national levels in the deaf and the hard of hearing. The Federal Government set up a program providing hearing aids for Veterans and also contributed funds through various agencies such as the Children's Bureau and the Commission for Crippled Children for special projects in speech and hearing. Universities and colleges by the dozens established speech and hearing programs; states passed measures which provided special education, or if you prefer, education for special children in the public schools. Speech and hearing surveys were conducted on a state wide basis; and special social or philanthropic groups set up day schools for the deaf in various large cities throughout the country or in some other way contributed to the program. The country has become "hearing" conscious as never before.

In fact, there has been such an effective job done in selling the program that we are now in a position of having created the demand and interest, but do not have trained personnel to fill the need. If we can do as good a job in selling competent seniors in high school on becoming teachers of the deaf, audiologists, and speech therapists, some day we may be able to supply the demand.

The Development of Clinical Audiology

We have reviewed what we conceive to be the major contributing factors to the growth of audiology in general. It now becomes pertinent to talk more specifically in terms of the advancement of the youngest member of the hearing field, academically speaking at least, clinical audiology.

We have previously mentioned the development of the vacuum tube and its effect on the field of audiology. One piece of equipment made possible by this development was, of course, the pure tone audiometer. Previous to this time, the tuning fork had been the principal instrument used by the otologist in differentiating between conductive and perceptive hearing loss.

It had been known for years, that loss by air conduction with relatively normal bone conduction is characteristic of conductive type hearing loss while a loss by both bone and air is a strong indication of perceptive involvement. The Rinné tuning fork test, in fact, was designed to demonstrate the bone-air relationship, clinically.

The tuning fork tests, however, had certain weaknesses. In the first place, the intensity of the fork tone could not be determined accurately, nor could a constant intensity level be maintained for the exploration and measurement of threshold. There was simply no way of knowing the exact amount of hearing loss of the patient.

As a result of these deficiencies, no accurate records of a patient's hearing loss could be kept from year to year as it was most difficult for the otologist to determine, except within gross limits, that a Rinné was more negative or more positive than it had been six months previously or that, as in the Weber, a tone was more lateralized or less lateralized than it had been the last time the individual was tested. Further, if a child were to move to another community there could be no accompanying chart which would convey to his new teacher or doctor just what the child's hearing picture was.

Although it cannot be said that the audiometer solved all of the problems connected with hearing testing, it certainly has helped with many of them. Today the fact that we can send an audiogram across the nation

and know that it will have the same meaning to the doctor, clinician, or teacher that it had to us has proved to be an invaluable asset. Further, as was previously mentioned, a statistical analysis of a large number of these records from the files of hearing centers has yielded valuable clinical information.

Manufacturers of audiometers must meet certain specific and rather rigid requirements relative to the physical properties of the instrument. Such matters as distortion, air threshold calibrations, frequency range and accuracy, hum level, and maximum allowable error in attenuation are carefully regulated. There are problems yet to be solved in relation to certain variables encountered in bone conduction testing, not the least of which is the accurate calibration of the bone conduction receiver. These difficulties notwithstanding, the audiometer today has become an essential instrument for hearing testing and some, if not all, the problems connected with the testing of hearing by bone conduction may be eliminated in the future.

The Audiometer as an Aid in Diagnosis

Not only is the audiometer important in hearing testing, but it has also become one of the primary tools in diagnosis, i. e., in differentiating one type of hearing loss from another. Perhaps at the risk of boring those who are thoroughly familiar with the use of the audiometer, it might be well to review briefly some of the things we can learn from the audiogram. Before doing so, however, I should like to offer some precautionary remarks to the beginning audiologist.

First, although it is the obligation of every clinical audiologist worthy of the name to be completely familiar with and to be able to administer and interpret the various kinds of clinical diagnostic tests, the diagnosis of the individual's hearing loss must be made by the medical doctor.

I conceive it to be the responsibility of the audiologist to make complete reports of the results of his tests to the doctor and it is permissible to include a general summary of what those results seem to indicate if the doctor requests it. On the other hand, the audiologist's report to the patient should be in terms only of the severity of his loss, in what frequency range he has the greatest deficiency; what his loss means in terms of his ability to communicate with others; and his possibilities for receiving satisfaction from a hearing aid.

It is the responsibility of the otologist to keep abreast of the clinical developments in the field that he may properly utilize the information which the audiologist can furnish him.

Further it should also be stated catergorically that no diagnosis should be, or in fact, can be made from an audiogram alone. The case history, the medical examination, and other clinical tests to be mentioned later are all necessary to complete the diagnostic picture.

It must also be remembered that any review of diagnostic interpretations from an audiogram must be in terms of generalities and as such are subject to exceptions. With these precautions in mind suppose we proceed with our review by simply listing diagnostic indications of conductive loss which may be attained from the audiogram or from the testing procedure itself.

Conductive loss may be suspected when the following conditions exist: (1) When there is a loss of air conduction with relatively normal bone conduction. (2) When there is a greater loss of hearing in the low frequencies than in the high frequencies or the loss is straight across the audiogram. (3) When the patient shows no unusual sharpness or accuracy in the determination of threshold. (4) When there is no evidence of recruitment in testing particularly in the higher frequencies.* (5) When there is no evidence of a lowered pain threshold.** (6) A pure conductive hearing loss will never exceed 65 db.

*Recruitment may be defined as a more rapid increase in the sensation of loudness for a given increase in intensity than that experienced by normal ear.

**Although the audiometer is not usually employed as a test of recruitment, many times the phenomenon becomes apparent in the testing situation. If the patient demonstrates unusual accuracy in selecting threshold or complains that the test tone presented at above threshold levels for identification by the patient is uncomfortably loud, recruitment may be suspected.

Indications of perceptive loss are, in general, opposite to those just mentioned. We expect a loss by bone conduction as well as air; recruitment; a greater loss in the high than in the low frequencies; a particular sharpness and accuracy in the observation of thresholds; and in some cases a lowered pain threshold. Perceptive hearing loss can, of course, be of any degree.

Close observation of the patient's responses during the testing procedure as well as a careful examination of the audiogram—should point up some of the differences between conductive and perceptive loss. The picture may be somewhat confusing in cases of mixed deafness. It must again be noted that exceptions to these rules are common. Cases suffering from blocked eustachian tubes or blocked external canals, for instance, often produce a hearing deficiency in the high frequencies which may be mistaken for perceptive loss. Also, the bone conduction test may yield spurious results. In general, however, the above observations can be regarded as true. Careful consideration of the facts revealed by the case history in addition to the test results will further clarify the hearing picture.

The problem is still further complicated from the diagnostic standpoint because it is essential not only to be able to differentiate conductive from perceptive loss, but also to be able to diagnose a conductive loss caused by otosclerosis from one caused by otitis media or a perceptive loss in which there is damage to the hair cells and nerve endings of the cochlea from a perceptive loss where a lesion has occurred on the eighth cranial nerve itself. Although time will not permit a complete discussion of all the clinical developments which may be used in arriving at a differential diagnosis, I should like to mention a few of the most promising ones which may add greatly to our confidence in the final decision.

Carhart's Notch

It has not been many years ago that a prominent otologist is reported to have made the statement that, without instituting operative procedures, there was no sure way to diagnose otosclerosis except by post mortem examination. Such a diagnosis was obviously a little tardy to benefit the patient. Clinical audiology has come a long way since then and today such a diagnosis is possible with more than considerable accuracy.

Carhart at Northwestern University was the first to note that the pre-operative bone conduction curves in cases who later underwent operations for otosclerosis took a particular and characteristic form. He found that such a curve usually showed a loss of 5 db. at 500 cycles; 10 db. at 1000 cycles; 15 db. at 2000 cycles; and 5 db. at 4000 cycles.* This characteristic curve has been named the Carhart Notch. Such a curve becomes apparent in routine bone conduction audiometry and therefore a careful study of the audiogram on the part of the clinician and the doctor becomes increasingly significant. Previous to this time such a loss in the middle frequencies probably would have been interpreted as perceptive involvement.

It is thought that this loss by bone conduction has been brought about by the change in the mechanical system of the middle ear through otosclerostic involvement. A similar loss by bone does not occur in cases of otitis media.

The Luscher Test

The term recruitment has been previously mentioned. It was pointed out that this abnormal acceleration in the sensation of loudness which we have called recruitment does not occur in conductive hearing loss. Therefore any test which can accurately and consistently determine whether recruitment is present will automatically be valuable in differentiating conductive from perceptive loss. Bruine-Altes and Dix, Hallpike, and Hood[5] demonstrated that recruitment occurs in perceptive loss cases of the cochlear type, that is, where the damage occurs in the organ of Corti. Cases of perceptive loss in which lesions occur beyond the cochlea usually do not exhibit this phenomenon, or if so, only partially.[6]

Thus a sure fire test for recruitment also would be highly valuable in differentiating retrolabyrinthine from cochlear perceptive loss. There have, of course, been such tests

*Bruine-Altes as cited in Jerger, J. F.: "A Difference Limen Recruitment Test and Its Diagnostic Significance," *The Laryngoscope*, Vol. LXII, Dec. 1952, No. 12.

*These values have since been refined. See McConnell and Carhart, "Fenestration Surgery," Laryngoscope, Vol. LXII, Dec. 1952, p. 1267.

devised previously, among them the equal loudness balance test. There are, however, clinical difficulties in the presentation of this test which limit its usefulness. One test which seems to show considerable promise for clinical use is the Luscher test which may be easily and quickly administered and seems to have great validity.

Since recruitment is an acceleration in the sensation of loudness, it is reasonable to suppose that the recruited ear should also be capable of recognizing more and therefore smaller intensity changes, or DLs (difference limens) within a given increase in intensity above threshold than does the normal ear. Doerfler has demonstrated that this is true.[3] Because such an ear can detect smaller DLs, it would follow that it should also detect the increment (or decrement) in the intensity of a tone before the normal ear is able to do so.

This is the basic principle upon which the Luscher test operates. The Luscher equipment may be attached to the conventional audiometer which furnishes the signal source.* The equipment itself allows the operator to modulate the signal tone from 0 db. in small but ever increasing intensity steps up to 6 db. or 50 per cent maximum modulation. At some point, as the degree of modulation is increased from its zero value, the ear will begin to hear the test signal as a warble tone. This, of course marks the difference limen or the point at which the ear has recognized a just noticeable increase in intensity. The intensity of the test tone may be varied as can the rate at which the modulation is increased.

Luscher recommended that the test tone be presented at the 40 db. level above threshold. Jerger,[4] however, in a recent study at Northwestern University presented the tone at 15 db. level since Doerfler found that the size of the DLs in perceptive loss cases is reduced in greater degree in the 15-30 db. range above threshold than at higher levels where the DLs tend more nearly to approach normal values.

*The Luscher apparatus comes as standard equipment on the Sonotone Model 23—Advanced Clinical Audiometer.

**The difference in the level at which the test tones were presented has just been mentioned. Luscher presented the test tone with maximum modulation gradually diminishing it until the loudness beat disappeared. Jerger reversed the procedure, using the ascending method of stimulus presentation in which he proceeds from no modulation to full modulation. Luscher had also employed an interrupter switch in the presentation of the modulation tone which Jerger eliminated.

Although the procedure for administering the test differed somewhat in the Luscher and Jerger studies,** the results were similar. In general, these results may be summarized in the following statements:

1. In certain types of perceptive loss, notably those in which the etiology was indicative of cochlear damage such as acoustic trauma and Menieres disease, the DLs were abnormally small.

2. The DLs in conductive loss were normal in size.

3. In certain types of perceptive loss where retrolabyrinthine damage was present the DLs were of normal size.

Two other tentative conclusions made in these studies should be mentioned although further investigation seems necessary for verification.

1. Both Luscher's and Jerger's results indicated that in psychogenic hearing losses, the DLs are abnormally large.

2. Jerger also discovered that the DLs for people suffering from presbycusis (senile deafness) in the majority of cases were normal in size. In fact only two out of ten individuals tested exhibited reduced DLs.

It seems probable, therefore as Jerger points out, that senile deafness may not be strictly a cochlear type deafness as had been supposed previously.

Although further research is necessary, the Luscher test seems to have possibilities as a diagnostic tool and will undoubtedly be added as a routine procedure to the implementaria already employed in hearing testing.

Békésy Audiometer

Other types of hearing testing equipment and procedures also hold promise of diagnostic value. Recently Békésy[1] designed an audiometer which allows the patient to conduct his own hearing test. The instrument presents a tone which automatically but gradually increases in a sweep frequency manner through the usual testing range. The equipment is so constructed that the patient may increase or decrease the intensity alternately.

When the intensity of the tone decreases below the threshold level the patient im-

mediately presses a button which reverses the direction of the attenuator and the intensity increases until the tone is again just audible. This procedure is repeated throughout the test frequency range, the signal at one moment being just audible, and the next just inaudible. The result which is automatically recorded by the up and down excursion of a stylus on an audiogram form is therefore a continuous frequency audiogram showing the patient's observation of the stimulus between perceptibility and imperceptibility.

In cases of perceptive hearing loss, the variability in the length of the excursion of the stylus between the just perceptible and just imperceptible tone is considerably less than in the normal ear, particularly in the high frequences. The audiogram therefore graphically points out the reduced size of the DLs found only in perceptive loss, and the test becomes another important means of arriving at a correct diagnosis.

Speech Test

Although the use of speech as a means of testing hearing is not new, it is only in recent years, in fact since World War II, that standardized and objectively measured speech tests have assumed a prominent place in routine clinical examinations. It has long been recognized that the audiometer, as important as it is in testing hearing, has one great deficiency — it reveals what the patient cannot hear, but it fails to tell what the patient can hear, that is, how well the patient can use the hearing that remains to him.

Research done at the Harvard Psycho-Acoustic Laboratory during the war provided the means for obtaining this information in the form of certain speech tests, two of which are familiarly known as the Spondee and PB word lists. The former test consists of lists of two syllable words such as "earthquake" and "outlaw" which also have equal accent on both syllables. The PB test is composed of monosyllabic words in which the frequency of occurrence of speech sounds is in approximately the same ratio as the same sounds occur in spoken English.

It is evident that accurate and objective measurements of hearing by speech necessitate well calibrated, high fidelity electro-acoustic systems. Speech testing to be meaningful requires that in test-retest situations, scores can be duplicated within the limits of observational error. Furthermore, to be practical, a speech score in one clinic must have meaning in a similar clinic elsewhere. In addition to the specially designed equipment which is necessary to make these ends possible, acoustically treated rooms in which to perform the testing are highly desirable if not essential.

Two measurable aspects of speech testing are significant — speech intelligibility and speech discrimination. The speech intelligibility score, commonly referred to as the speech reception score, marks that level at which the Spondee words must be presented in order that 50 per cent of the words will be correctly understood. The discrimination score is determined by the number of words repeated correctly by the patient from the PB list when the test is presented at a predetermined level above the speech reception threshold.*

The speech threshold obtained on the Spondee test yields important information to the clinician in several ways. It not only marks the patient's loss of hearing for speech in decibels, but at the same time it reveals the amount of hearing which remains to the individual in which to hear speech. Further, some tentative judgment of the amplification which may be necessary to raise the person's level of hearing within normal range can be made by observing the degree of speech loss. In some instances a wide discrepancy between speech loss and average pure tone loss on the audiogram may have valuable diagnostic implications.

The PB scores are of particular diagnostic significance. It has long been known that the ear afflicted with perceptive loss has difficulty in discriminating between speech sounds. One of the common complaints of persons suffering from this type of loss is, "I can hear you, but I can't understand you." In this situation, unlike that in conductive loss cases, the problem is not one of simply over-riding the hearing

*The PB word list is usually presented at 25 db. above the speech reception score when the words are presented by live voice, i.e., through a microphone, and at 35 db. when phonograph records are used. In obtaining the Social Adequacy index score the list is presented at 110 db. re. 0002 dynes/cm.

loss by increasing the intensity until the ear hears in a normal fashion.

We expect discrimination to be affected in cases of perceptive loss and regardless of the amount of intensity added above the threshold level, the individual's ability to discriminate will not improve beyond a certain degree, that degree being determined by the amount and place of damage in the cochlea. To state it another way, discrimination is a function of intensity only up to a certain point in perceptive loss. Any intensity increment beyond that point may prove actually detrimental to hearing rather than beneficial.

We can thus conclude that the perceptive ear is characterized not only by a reduced ability to discriminate speech sounds, but that it may also have a relatively narrow comfortable loudness range. Sounds below a given level are too loud. The "in between" range in which the ear may hear fairly well may be only a relatively few decibels.

The ear with conductive loss behaves in a different fashion. Its ability to discriminate will improve as the intensity is increased until it understands all or nearly all the test words. The behavior of the conductive loss ear is similar to that of the normal ear once the hearing loss has been overcome by sufficient intensity increment.

Thus the PB test is a valuable diagnostic aid in differentiating conductive from perceptive involvement. There are other ways in which speech testing may be employed advantageously, particularly in testing for malingerers and in discovering those suffering from psychogenic hearing loss, but they cannot be discussed here. Suffice it to say that the development and use of the speech tests have marked a great step forward in the development of clinical audiology.

In this paper an attempt has been made to present the reasons for the rapid growth of the whole field of audiology and to mention at least the significant developments and advancements in diagnostic testing in clinical audiology. The future undoubtedly holds additional and perhaps even more startling discoveries than has the past. No one can deny, however, that the developments thus far have contributed much to the betterment of that large group of individuals who suffer from loss of hearing.

REFERENCES

1. Bekesy, G.: A New Audiometer. *Acta Otolaryngol.*, 35:411-422, 1947.
2. Dix, M. R.; Hallpike, C. S.; and Hood, J. D.: Observations Upon the Loudness Recruitment Phenomenon with Especial Reference to the Differential Diagnosis of Disorders of the Internal Ear and VIIIth Nerve. *Jour. Laryngol. and Otol.*, 62:671-686, Nov., 1948.
3. Doerfler, L. G.: Differential Sensitivity to Intensity in the Perceptively Deafened Ear. Doctoral Dissertation, Northwestern University, 16:75-79, 1948.
4. Jerger, J. G.: "A Difference Limen Recruitment Test and Its Diagnostic Significance," *The Laryngoscope*, Vol. LXII, Dec. 1952, No. 12.
5. Luscher, E., and Zwislocki, J.: A Simple Method of Monaural Determination of the Recruitment Phenomenon. *Prac. Oto-Rhine-Laryngol.*, 10:521-522, 1948.
6. McConnell, F. and Carhart, R.: "Penestration Surgery," *The Laryngoscope*, Vol. LXII, Dec. 1952.

Oklahoma Has Twenty-four Accredited Hospitals

Twenty-four Oklahoma hospitals have been included in the list of accredited hospitals recently released by the Joint Commission on Accreditation of Hospitals.

The list is the first published by the Joint Commission since it took over the actual hospital surveyal work from the American College of Surgeons January 1, 1953. The Commission is supported by the American College of Physicians, the American College of Surgeons, the American Hospital Association, the American Medical Association and the Canadian Medical Association. Oklahoma hospitals meeting the requirements are:

Valley View Hospital, Ada; Hardy Sanitarium, Ardmore; Chickasha Hospital, Chickasha; Western Oklahoma State Hospital and Western Oklahoma Tuberculosis Sanatorium, Clinton; Enid General Hospital and St. Mary's Hospital Annex, Enid; Benedictine Heights Hospital, Guthrie; St. Mary's Hospital, McAlester; Muskogee General and Oklahoma Baptist Hospital, Muskogee; Ellison Infirmary and Norman Municipal Hospital, Norman;

Bone and Joint Hospital, Mercy Hospital, St. Anthony Hospital, University Hospital and Oklahoma Hospital for Crippled Children, and Wesley Hospital, all of Oklahoma City; Ponca City Hospital, Ponca City; A.C.H. Hospital, Shawnee; Stillwater Municipal Hospital, Stillwater; Hillcrest Memorial Hospital and St. John's Hospital, Tulsa.

Case Report

Benign Inoculation Lymphoreticulosis

CATSCRATCH DISEASE

J. NEILL LYSAUGHT, M.D.

THE AUTHOR

J. Neill Lysaught, M.D., author of the Case Report on Cat Scratch Disease is an Oklahoma City pediatrician. He was graduated from the University of Kansas School of Medicine in 1944. Certified by the American Board of Pediatrics, and a member of the American Academy of Pediatrics, he was director of the pediatric outpatient department at Johns Hopkins and instructor in pediatrics at Johns Hopkins before coming to Oklahoma.

Although only four years have elapsed since Debré first described catscratch disease, cases have now been reported in all European countries, Canada, and over the entire United States. Since the entity must be considered in the differential diagnosis of any regional lymphadentis, it is felt that a description of the disease and some illustrative case reports may be of value.

Typically, there is a history of contact with and/or a scratch by a cat. In a few days, a papule or pustule forms at the site of the scratch. Following this by from four days to three weeks there is enlargement of the lymph nodes draining the area involved. The nodes are moderately tender and the skin overlying them exhibits increased local heat. Fever may or may not be present, although sometimes it is a very prominent symptom. Occasionally transient rashes resembling erythema multiforme or erythema nodosum appear.

Laboratory examination of the blood shows only slight or no leukocytic response. The only proof of diagnosis is the demonstration of a positive skin test to an antigen made from pus aspirated from a suppurating node of a patient with the disease. This material is prepared just as is a Frei antigen. A positive test is denoted by a wheal with erythema and induration starting in 24 to 36 hours and persisting for days. Occasionally, vesiculation and even superficial sloughing occur at the site of skin testing. Positive skin tests generally persist over periods of years.

The course of the disease as mentioned is one of slow indolent enlargement of the areal lymph nodes over a period of three to 12 weeks. These nodes may eventually suppurate and require drainage or excision.

Nodes removed surgically show an epithelioid cell type of chronic inflammatory reaction. There is no histologic specificity to the appearance of the nodes that will allow microscopic diagnosis.

Recently Mollaret and his co-workers have proved the viral origin of the disease and have been able to transmit it to monkeys and to humans.

Case 1: L. B., a four-year-old white male had been given a cat 18 days before, which on the first day had scratched him on the upper lip and on each cheek. Four days later, swelling of the anterior cervical and submaxillary glands on the right was noted, with the appearance of a red pustule at the site of the original scratch on the right cheek. The nodes had enlarged progressively and almost painlessly to a mat two and one half by one and one half inches. No fever had been present nor were there any rashes at any time.

On physical examination, the pustule had healed with formation of a fine reddened scar 1 mm. in diameter and the rubbery slightly tender mat of nodes previously described was palpable. No skin test was done because of the clear cut history and findings, and no treatment was prescribed.

Case II: S. M. B., five-year-old white female had a history of sudden onset of swelling in right inguinal glands two weeks before and a temperature of 106° F on the first day which had gradually subsided over a week. A white blood count done elsewhere was 15,500 with a normal differential, and a tuberculin patch test was negative. The swelling had increased in size daily since onset despite two injections of penicillin totaling 800,000 units and five days of aureomycin therapy. The child had a kitten which she habitually held in her lap and which had scratched her lightly over the lower abdomen and thighs several times before the onset of her illness.

Physical examination was essentially negative except for the presence of a two-inch by one-inch reddened mat of moderately tender nodes in the right inguinal area. These nodes were fluctuant and 4 cc. of reddish-brown pus were aspirated. This pus was bacteriologically sterile and from it a Frei type antigen was made, by the method of Foshay.[2] This was injected intradermally, and 48 hours later there was erythema one and one half inches in diameter with a central area of vesiculation which over the next few days progressed to umbilication with superficial slough. Injection of the same material into two controls gave no untoward reaction at 48 hours. No treatment was suggested.

Discussion

Since it has been shown[5] that the animals which carry this disease are not themselves ill and do not react to the specific antigen, it must be assumed that they act only to spread the disease by passive mechanical transmission. That this is true is borne out by the fact that a clinical picture similar to this disease has been seen following pricks by thorns, splinters, bones, etc. in patients who had no contact with cats.

The incubation period varies from three to seven days from the original scratch to development of the initial lesion consisting of papule or pustule at the site of scratch. This initial papule or pustule may be very indolent in its healing. In from seven to 42 days thereafter, appearance of swollen nodes begins. Any nodes may be involved depending on the site of inoculation.

The tendency is for gradual decrease in swelling with or without suppuration. Healing leaves no scar. Complications are few, although concurrent encephalitis has been reported.[4] The differential diagnosis is that of any regional adenitis, including tuberculous adenitis, tularemia, lymphogranuloma venereum, infectious mononucleosis, sarcoidosis, Hodgkin's disease, sodoku and pyogenic adenitis.

It has been the impression of some investigators that aureomycin and/or terramycin are effective in shortening the course of the disease and preventing suppuration. However, it is rather doubtful that these drugs are at all effective in the well-established case.

It is felt that if the possibility of this disease is borne in mind that much unnecessary medical treatment or surgical biopsy may be prevented. For a more complete review of the subject, the reader is referred to the recent publications of Daniels and MacMurray.

REFERENCES

1. Mollaret, P., Reilly, T., Bastin, R., and Tournier, P., La d'ecouverte du virus de la lymphoreticulose benigne d'inoculation. Presse. Med. 59:681, 59:701, 1951.
2. Foshay, L., (1951) *What's New.*
3. The'lin, F., Martin-du-pan, R., New observations of disease due to cat scratches. 40:74, 1951. Praxis, Bern.
4. Stevens, H., Cat scratch fever encephalitis. Am. J. Dis. Chil. 84:218, 1952.
5. Daniels, W. B. and MacMurray, F. G., Catscratch disease; non-bacterial, regional lymphadenitis, Arch. Int. Med. 88:736, 1951.
6. Daniels, W. B. and MacMurray, G., Catscratch disease: non-bacterial, regional lymphadenitis: A report of 60 cases. Ann. Int. Med. 37:697, 1952.

ATTEND THE A. M. A.

San Francisco - - June 21-25

Medical Grand Rounds

Case Presentation:

CONGENITAL HEMOLYTIC ANEMIA

JAMES M. COLVILLE, M. D., TED CLEMENS, Jr., M.D. and ROBERT F. MORGAN, M.D.

THE AUTHORS

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Doctor Clemens was graduated from the University of Oklahoma School of Medicine in 1952. He interned at Wisconsin General Hospital and is now resident in medicine, University Hospital.

Doctor Morgan was graduated from the University of Oklahoma in 1952 and is now interning at University Hospital.

On August 18, 1953, this 62-year-old white man was admitted to the University Hospital for the second time.

Chief Complaint: 1. An ulcer on the left shin for 50 years.

2. Anemia for six months.

Present Illness: At the age of 12, or 50 years prior to admission to this hospital, the patient was kicked in both shins by a person who was wearing brass-toed boots. Trauma was indicated by bruises approximately 4 centimeters in diameter over the anterior aspects of both tibiae. These lesions sloughed resulting in draining, ulcerating areas on either tibia. A few months later these areas were operated upon by a physician who subsequently told the patient that he had osteomyelitis of both lower tibiae. The areas did not heal and have continued to drain until the present time. In 1949 the patient was hospitalized at another hospital in Oklahoma City for infection which had spread from the original site of osteomyelitis in the right lower tibia to involve the right knee. A mid-thigh amputation of the right leg was performed. The ulcerating area on the left was skin-grafted shortly thereafter, but the graft did not take and the bone was scraped and regrafted. The area again broke down and has continued to drain yellowish material until the present time.

Six months prior to the admission to this hospital, the patient underwent a left lumbar sympathectomy in an attempt to speed the healing of the ulcer on the left tibia. The patient stated that at that time he was found to be anemic and received three blood transfusions before surgery and two blood transfusions after surgery. Following the operation, blood studies and gastric analysis were performd. The patient did not know the results of these studies but was told that he had pernicious anemia and was treated with parenteral liver, at first twice a week, and later, once every two weeks. Early in the course of liver therapy his blood picture improved. However, continued treatment did not produce further improvement in his anemia and he was subsequently sent to the University Hospitals with a note that the diagnosis of pernicious anemia was doubtful and that the last blood count approximately two weeks before admission had shown a hemoglobin of 9 grams per 100 cc of blood and a red blood cell count of 2.8 million red cells per cubic millimeter. There had been no signs or symptoms of anemia in this patient and he specifically denied glossitis, paresthesias.

Past History

Forty years prior to admission, at age 22, the patient had had pneumonia which was followed by generalized icterus. Thereafter

with nearly every upper respiratory tract infection, he became jaundiced. Approximately three years prior to admission, he had typical symptoms of peptic ulcer. An upper GI series revealed "a touch of ulcer". On medical management, the symptoms improved.

Family History: Ths patient has a sister, age 70, who is living and apparently well. However, it has been noted that every time she suffers an upper respiratory tract infection, she become icteric.

System Review: Essentially non-contributory.

Physical Examination: T. 98.6; P. 18; B.P. 110 mm. of mercury, systolic, 70 mm. of mercury, diastolic. General: the patient was a well developed, well nourished white male who appeared to be chronically ill. There was a right mid-thigh amputation. Skin: the skin was generally sallow with a faint icteric tint. Eyes: the sclerae were slightly icteric. Tongue: was normal in appearance. Examination of the heart and lungs was essentially normal. Abdomen: the spleen was palpable 8 centimeters below the left costal margin with a sharp, smooth edge which was slightly tender; the liver was palpable approximately 5 centimeters below the right costal margin and was non-tender. Examination of the extremities revealed a well-healed mid-thigh amputation on the right. There was ankylosis of the left ankle and a large area of discoloration covering 75 per cent of the anterior, medial and lateral aspects of the left lower leg with three large denuded and ulcerating areas draining a serosanguineous material. Neurological examination was essentially normal.

Laboratory: Laboratory work on admission included the following: Red blood cell count, 3.2 million per cubic millimeter; hemoglobin, 10 grams per 100 cc.; hematocrit, 25 per cent; white blood cell count, 7,150 per cubic millimeter. Admission urinalysis showed 2+ protein and occasional white cells per high power field. Serum bilirubin: total 3.6 mgms. per 100 cc. with 0.175 per cent in the direct fraction and 3.45 mgms. per cent in the indirect fraction. Fasting gastric aspiration: total acid, 35 degrees; free acid, 15 degrees. Congo red test: 14.1 per cent retention in one hour. This was interpreted as a negative test. Gum biopsy for amyloidosis was negative. Red blood cell fragility test: Patient's hemolysis was 86 per cent complete in concertration of 0.4 per per cent saline. Control: hemolysis was 13.8 per cent complete in concentration of 0.4 per cent saline. Peripheral blood studies repeated ten days after admission revealed: questionable spherocytosis; reticulocyte count of 6.1 per cent; hemoglobin, 12.4 gms. per cent; red blood cell count, 3.26 million per cubic millimeter; white blood cell count 9,700 per cubic millimeter, and hematocrit 31.5 per cent. Twenty-four hour fecal urobilinogen was 72.4 Ehrlich units per 100 gms. of stool. Indirect Coombs test, negative. Bone marrow examination revealed hypercellularity with erythroid elements constituting 78.3 per cent of the nucleated cells; 24-hour incubation of the Red Cell Fragility Test confirmed the previous examination. Further smears of peripheral blood showed 27 per cent reticulocytes and definite spherocytes.

The patient's 70-year-old sister was asked to come in for examination and blood studies. Examination revealed that she was markedly jaundiced and her spleen was palpable 5 centimeters below the left costal margin. She has been getting along quite well through the years and showed no signs or symptoms of the anemia confirmed by examination of peripheral blood. Her red cells had markedly decreased resistance to hypotonic saline.

Course: In view of the above findings of this man, it was felt that the diagnosis of congenital hemolytic anemia had been well established and that splenectomy was indicated. Accordingly, approximately one month following admission to this hospital, (9/10/53), the patient was operated upon and a large, tense spleen was removed without undue difficulty. In addition, the gall bladder was removed because it was chronically inflamed and contained stones. The spleen weighed 970 grams and microscopically showed acute passive hyperemia. Postoperatively, the patient's course was smooth. On the 14th postoperative day the red cell count was 4.6 million per cubic millimeter; hemoglobin, 16 grams per cent; reticulocytes, 0.6 per cent; white cell count 11,600 per cubic millimeter; serum bilirubin, 1.0 mgm. per cent. The ulcer on the surface of the left tibia did not change markedly following surgery, and as of December 18, 1953, there

appeared to be minimal healing without evidence of active infection. Skin grafting is planned.

Discussion

This patient represents a typical case of congenital hemolytic anemia or spherocytic jaundice. His family history reveals that one sibling has had similar signs and symptoms for many years. The patient has had intermittent jaundice, chronic leg ulcers, splenomegaly and anemia for approximately 50 years. His present laboratory findings are compatible with a diagnosis of congenital hemolytic anemia. They will be discussed. When the diagnosis of hemolytic anemia is established, it is of utmost importance that all available members of the family be examined for spherocytosis. There may be close relatives who have spherical erythrocytes, but who have not manifested the disease clinically. The episodic nature of the disease itself may confuse the diagnostician. A patient seen in a quiescent period of the disease will frequently not show all of the striking abnormalities in laboratory tests which the present case demonstrates.

Given a patient with chronic anemia in whom the indices are normochromic, the finding of an elevated reticulocyte count suggests the possibility of a hemolytic anemia. The history, physical, and initial laboratory findings in the case at hand suggest such a process. The clinician must then differentiate the congenital from the acquired type. The acquired type may be divided into two categories, primary or idiopathic acquired hemolytic anemia, and hemolytic anemia secondary to any of a variety of malignancies, such as leukemia, lymphosarcoma, Hodgkin's disease and others. It is important, therefore, to exclude these diseases early in the study of any hemolytic anemia. If one be present, the basic problem is that of the primary disease process and treatment is governed accordingly.

The laboratory findings are of prime significance in differentiating the congenital from the acquired hemolytic anemia. These procedures are aimed at determining whether the primary defect is present in the erythrocytes or whether there is another explanation for hemolysis, such as a circulating hemolysin or an aggressive sequestration of red cells by the spleen. In congenital hemolytic anemia, the defect is in the red blood cell itself, which is spherical rather than biconcave.[1] That this abnormally shaped cell is the primary cause of the anemia has been shown experimentally in a variety of ways. When red blood cells from a normal person are transfused into an individual with congenital hemolytic anemia the transfused cells have a normal life span.[2] Conversely, when red blood cells from a patient with congenital hemolytic anemia are transfused into a normal recipient, the transfused erythrocytes survive only approximately 15 days. The spherical erythrocyte of congenital hemolytic anemia is more readily hemolyzed by hypotonic saline than is the normal red cell. Clinically, the two simplest and most informative laboratory tests are examination of peripheral blood for spherocytes and measurement of the osmotic fragility of the patient's red blood cells.

In certain types of acquired hemolytic anemia, the defect is due either to the presence of an auto-antibody adsorbed on the patient's red blood cells or to an auto-antibody in the serum, or to both. This concept is supported by transfusion experiments, which show that the fate of the transfused cells is the reverse of the situation in congenital hemolytic anemia. When cells from a normal person are transfused into a patient with acquired hemolytic anemia, the transfused cells have a shortened life span.[2] Conversely, when red blood cells of a patient with acquired hemolytic anemia are transfused into a normal person, the transfused erythrocytes have a normal life span. Clinically. the presence of an auto-antibody is detected by a positive Coombs test.[3]

The basis of the Coombs test is as follows: red blood cells from a patient are washed in saline and to these washed cells, rabbit anti-human serum is added. If hemolysis ensues, the test is positive. The mechanism for this test is that an antibody which is not washed off by saline is adsorbed on the affected red blood cell. This adsorbed antibody reacts with rabbit anti-human globulin to produce hemolysis. The indirect Coombs test detects an auto-antibody in a recipient's serum. Red blood cells from a normal person are incubated with the patient's serum and following this incubation the direct Coombs' is performed.

Here the auto-antibody in the serum is adsorbed on the normal individual's cells during incubation and subsequently these cells are hemolyzed by the antihuman rabbit serum. The antigenic stimulus for the production of these auto-antibodies is unknown. In acquired hemolytic anemia, the osmotic fragility of the red cells is normal during quiescence, but may be irregularly increased during a crisis. Thus, the test is variable and often not informative. Here, too, the cells are normal in shape.

Various theories have been proposed for the pathogenesis of the hemolytic crisis in congenital hemolytic anemia. The precise mechanism is still unknown. Dameshek believes it due to a humoral substance secreted by the spleen.[4] Owrens of Norway believes it due to an acute and transitory aplasia of the bone marrow with subsequent anemia occurring rapidly because of the shortened life span of the red cell.[5] Although Owrens' clinical observations are interesting, further confirmation of this hypothesis is needed.

The treatment of hemolytic anemias may be considered under two categories: those aimed at supporting the patient through a crisis and those aimed at eradicating the disease. Transfusions given at frequent intervals may be a life-saving matter in a sharp crisis. More frequently there is a slow but relentless progression of the anemia with blood transfusions being necessary but less pressing. If possible, transfusions should be delayed until the basic laboratory tests have been satisfactorily completed. The interpretation of the direct and indirect van den Bergh and of the level of the fecal urobilinogen is very difficult if whole blood has been given. Many physicians and surgeons prefer to delay blood in cases coming to splenectomy until the abdomen has been opened and the splenic pedicle clamped. This attitude has been prompted by the added gravity of a possible transfusion reaction in a patient with hemolytic anemia. Indeed, the opinion has been current that such patients show an increased tendency to have transfusion reactions. With a wider understanding of various blood sub-groups, and hence better typing of blood as to its compantbility, the incidence of reactions in hemolytic anemia, as in other circumstances, should be reduced. Certainly the most meticulous and thorough care in typing and cross matching blood to be given to a person with a hemolytic anemia is in order. In either congenital or acquired hemolytic anemias, spontaneous remissions may follow such conservative management, but the unpredictability of such remissions leaves the physician small comfort.

If the hemolytic process is thought to be the result of an antigen-antibody reaction, the use of ACTH or corisone is logical. Experience with these hormones in selected cases of acquired hemolytic anemia has been gratifying.[3] If a remission can be induced, it is safe to anticipate success by similar management of subsequent crises. All too frequently, however, the remission lasts only so long as the patient is taking the drug.

Definite treatment for congenital hemolytic anemia is splenectomy. If all splenic tissue, including accessory spleens, is removed, almost 100 per cent of the patients can be expected to return to permanent good health.[7] The operation does not alter the basic defect of the erythrocyte, but does remove the organ concerned with its rapid destruction. In the acquired variety, only 50 per cent or less of the patients will be benefitted by splenectomy.[7] In the malignant lymphomata and other malignancies, where the spleen is infiltrated, increased sequestration and phagocytosis by the spleen may result in a severe acquired hemolytic anemia. Here splenectomy may offer dramatic improvement in the patient's general condition.

Finally, one should be aware of the increased incidence of biliary pigment stones in patients suffering from chronic hemolytic anemia.[8] It is not uncommon to find gall bladder disease and not hemolytic anemia directing the patient to the physician. When such is the case, both processes should be treated surgically. Because any stressful situation may precipitate a hemolytic crisis, splenectomy and then cholecystectomy are often recommended.

REFERENCES

1. Haden, R. L.: J. Lab. and Clin. Med., 26:65, 1940.
2. Loutit, J. F., and Mollison, P. L.: J. Path. and Bacteriol., 58:711, 1946.
3. Singer, K. and Motulsky, A. G.: J. Lab. and Clin. Med., 34:768, 1949.
4. Dameshek, W., and Bloom, M. L.: Blood, 3:1381, 1948.
5. Owren, P. A.: Blood, 3:231, 1948.
6. Dameshek, W., Rosenthal, M. C., and Schwartz, L. I.: New England J. Med., 244:117, 1951.
7. Zuelzer, Wolf W.: J. Pediat., 41:4, 1952.
8. Pemberton, J. de J.: Ann. Surg., 94:755, 1931.

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Association Activities

PRESIDENT'S LETTER

Another year has rolled around, and much too fast to have allowed time for all the work allotted to me. Many of the good resolutions have not been carried out; but perhaps it is better thus. Every President starts out with vigor, and mellows with age. I sincerely hope that it has not all been in vain.

Any failures, or shortcomings, that may have occurred, have not resulted from lack of cooperation of the Executive Office, or from the Membership. Allow me to give credit to our Executive Office, the Executive Secretary, and his worthy assistant for the energetic enthusiasm, and efficient service in the affairs of The Oklahoma State Medical Association.

Permit me, also, to again mention my immediate predecessor, Dr. Alfred Sugg, who did so much to help me during my preceptorship.

To my successor I offer sincere thanks for his valuable assistance during my year as President. I also offer appreciation to my Committees, and their excellent Chairmen, who have performed their arduous tasks of handling the detailed problems of the Association. I must pay especial tribute to the Public Policy Committee, and its Chairman, Dr. R. Q. Goodwin, and his ever ready Legislative Chairman, Dr. Malcolm Phelps.

Last, but not least, and probably the most deserving of all, the enthusiastic Membership that has arisen to every call of duty to maintain a better Association, and for better health of the citizens of Oklahoma. We, the doctors of Oklahoma will now, and in the future, be the watchdogs over the health problems of this great State of ours.

I sincerely offer my loyal support to my successors, for whatever it may be worth.

John E McDonald MD.

President

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Have You Heard?

HENRY H. TURNER, M.D., Oklahoma City, was guest speaker at the annual meeting of the Missouri State Medical Association April 7. He spoke on "Endocrine Disorders of Childhood."

CLYDE KERNEK, M.D., formerly of Holdenville, writes that he is still serving as resident in surgery at the New England Center Hospital, Boston 11, Mass. His address is 32 Riverdale Road, Wellesley 82, Mass.

FORMATION OF THE OKLAHOMA ALLERGY CLINIC in the Pasteur Medical Building, 711 N.W. 10th St., Oklahoma City, has been announced by George S. Bozalis, M.D., Dick H. Huff, M.D., Vernon D. Cushing, M.D., and George L. Winn, M.D.

ROSCOE WALKER, M.D., Pawhuska, was recently honored with a barbecue and celebration given by his home town in observance of his 41 years of medical practice there. More than 400 friends and neighbors were present.

J. GUILD WOOD, M.D., Weatherford, was recently the subject of a feature story in the Daily Oklahoman about his hobby, raising orchids. Doctor and Mrs. Wood estimate they have given more than 100 orchids away a year since they became interested in the hobby.

ROY L. COCHRAN, M.D., was recently honored with a surprise birthday party at his office in Caddo. He was 64 and has practiced in Caddo for 35 years.

H. E. GROVES, M.D., University of Oklahoma School of Medicine graduate, and recently discharged from the U. S. Navy, has joined the Foster Clinic at 318 W. Commerce, Oklahoma City.

RANCH ACRES MEDICAL CENTER at 31st and Harvard in Tulsa has recently opened. The one story building of Colorado pink stone, resembles a clubhouse. The comfortable reception room features a wood burning fireplace. Physicians and dentists located in the center are Doctors Henry A. Brocksmith, James W. White, Loren V. Miller, J. K. Lee, Robert E. Wright, Gifford H. Henry, William S. Jacobs, Oliver H. Thompson, T. C. Covington, Jr., Jack D. Pigford, H. F. Mount and John F. May.

LEB. E. PEARSON, M.D., was recently featured in an article in his home town recounting his experience during 50 years of medical practice.

GEORGE BAXTER, M.D., Shawnee, was presented a gold 25 year service key by Oklahoma Baptist University, which he has served as physician for a quarter of a century.

JACK P. MYERS, M.D., recently discharged for the military service after serving two years in Italy, has joined the Buell Clinic in Okmulgee.

J. J. BILLINGTON, M.D., has opened a clinic in Stigler.

EDWARD M. SCHNEIDER, M.D., formerly of Tulsa, has been apointed chief of the gastroenterolgy section of the Veterans Administration hospital in Oklahoma City.

JOE L. DUER, M.D., Woodward, represented the O.S.M.A. at a meeting of the American Medical Education Foundation in Chicago recently.

J. HOYLE CARLOCK, M.D., Ardmore, addressed the Ryonis Club in that city recently on the medical angle of poliomyelitis.

W. N. OXLEY, M.D., formerly of Texhoma, has joined the Smith-Buford Clinic in Guymon.

D. C. RYAN, M.D., has recently moved from Antlers to Duncan where he joined the Lindley Hospital staff.

LOYD LONG, M.D., Ardmore, headed the Heart Fund Drive in that city.

N. H. COOPER, M.D., formerly director of the Kay County Health Department in Ponca City, is now director of health activities of the Welfare and Health Council of New York City.

FOUR MCALESTER PHYSICIANS have recently received their Board certification. They are S. L. Norman, M. D., Ben T. Galbraith, M. D. and C. K. Holland, Internal Medicine, and Bruce H. Brown, M. D., Radiology.

HARL N. STOKES has been named the administrator of Capitol Hill General Hospital in Oklahoma City. New owners of the hospital are A. R. Jackson, M.D., John R. Little, M.D., Ralph O. Clark, M.D., Marshall Opper, M.D., Charles F. Engles, M.D., J. M. Cannon, M.D., Paul B. Rice, M.D., (now deceased); J. T. McInnis, M.D., E. E. Shircliff, M.D., C. F. Foster, M.D., Scott Hendren, M.D., and Vance A. Bradford, M.D.

LT. COL. RICHARD J. BRIGHTWELL (MC) has been elected a Fellow of the Royal Society of Medicine, London. His address is: Hdq. Third Hospital Group, APO 240, USAF, c/o Postmaster, New York. Col. Brightwell is due to rotate back to the States in August.

SIR ALEXANDER FLEMING delivered the annual Alpha Omega Alpha address at the University of Oklahoma School of Medicine April 22.

W. C. GILLIAM, M.D., 85 year old Spiro physician, was honored by his fellow townspeople on his birthday.

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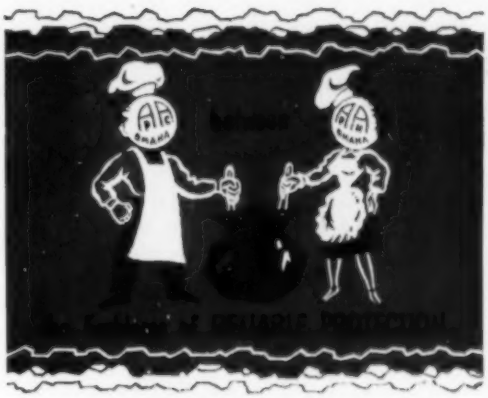

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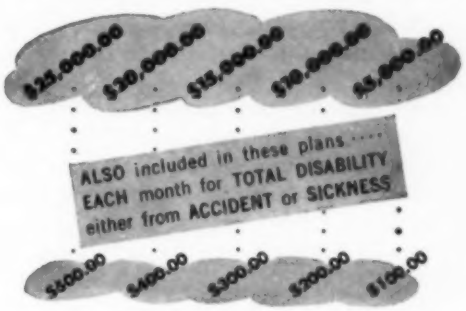

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Deaths

H. C. Cockerill, M.D., 1871-1954

H. C. Cockerill, M. D., Mooreland, died January 25, following a heart attack.

Doctor Cockerill was born at Villeaca, Ia. July 14, 1871. He established his medical practice in Mooreland in 1903. He was a member of the Masonic order having received his 50 year pin in that organization in 1946, also a member of the Mystic Shrine, the Scottish Rite Consistory and Odd Fellows lodge and the Methodist church.

William B. Harned, M.D., 1876-1954

William B. Harned, M. D., Walters, died January 26 of coronary thrombosis.

Doctor Harned, who had practiced medicine for more than 52 years, came to Oklahoma in 1907. He practiced at Chattanooga until 1917 when he went into military service. He was discharged as a lieutenant colonel. From 1932 to 1940 he was on active duty in CCC work. He resumed private practice in Walters and had practiced there since except from 1945 to 1947 when he practiced in Grandfield.

E. E. Lawson, M.D., 1876-1954

E. E. Lawson, M. D., for 30 years a Medford physician, died January 12 in an Enid hospital.

Doctor Lawson was graduated from the University of Baltimore school of Medicine. In 1902, Doctor Lawson came to Oklahoma and opened his office at Carrier. He later practiced at Gage, Seiling, Oakwood and Helena. He served with the army medical corps in World War I.

Edward F. Davis, M.D., 1881-1954

Edward F. Davis, M.D., Sulphur, died March 15 after several years illness.

Doctor Davis was born in Dent, Ohio, and graduated from the University of Cincinnati Medical School in 1902. He spent a year in Peoria, Ill., before coming to Oklahoma City in 1903. He later studied at the University of Vienna, Austria. During World War I, he served as a captain in the medical corps. He moved to Ardmore in 1941 and later moved to Sulphur.

Patrick Henry Mayginnis, M.D., 1871-1954

Patrick Henry Mayginnes, M. D., pioneer Tulsa physician, died January 19 after a long illness. Doctor Mayginnes retired in 1948 after practicing 51 years in Oklahoma. He practiced in Cushing before coming to Tulsa in 1908.

Doctor Mayginnes was graduated from the St. Louis College of Physicians and Surgeons in 1897. He was an Honorary Member of the Oklahoma State Medical Association.

Walter Hardy, M.D., 1870-1954

Walter Hardy, M. D., Ardmore resident for 72 years, died February 16 in an Ardmore hospital.

He was graduated from Washington University School of Medicine in St. Louis in 1897. Doctor Hardy was born April 11, 1870 in Arkansas.

He was a life member of the Oklahoma State Medical Association, a Mason, a fellow of the American College of Surgeons, and a charter member of the First Methodist Church.

R. D. Cody, M.D., 1873-1954

R. D. Cody, M. D., pioneer Centrahoma physician, died February 1 after a week's illness.

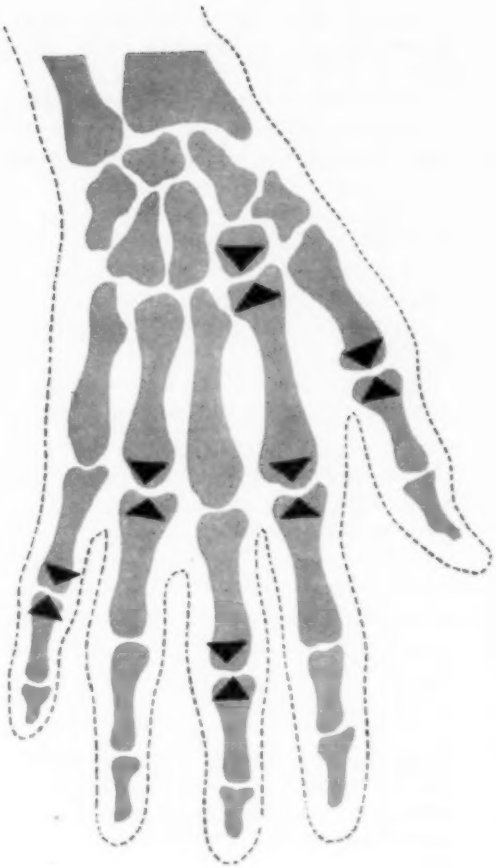
Doctor Cody had practiced in Centrahoma since 1904 until his retirement in 1951. He had been presented an O.S.M.A. Fifty Year Pin last year.

George W. Scott, M.D., 1911-1954

George W. Scott, M.D., former Tishomingo physician, died April 1 at his home in Irving, Texas.

Doctor Scott was born in 1911 and graduated from the University of Arkansas medical school in 1939. He practiced in Tishomingo from that time until 1952 when he moved to Texas except for a period during World War II when he served as a captain in the medical corps in the South Pacific.

(Continued on Page 144)



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Deaths

(Continued from Page 142)

J. B. LANSDEN, M.D., 1877-1954

J. B. Lansden, M.D., Greer county physician for many years, died March 5 following an illness of six months.

Doctor Lansden was born at Livington, Tenn. and attended the University of Nashville and the University of Tennessee and graduated from the University of the South, Sewanee, Tenn., in 1901. He practiced in Willow Grove, Tenn. until 1913 when he moved to Granite.

He had received a 50 Year Pin and Life Membership.

Survivors include the widow of the home, two sons and a daughter.

P. N. CHARBONNET, M.D., 1890-1954

P. N. Charbonnet, M.D., formerly of Tulsa, and a Life Member of the Oklahoma State Medical Association, died recently at the Boston Club in New Orleans where he had made his home for several years.

Doctor Charbonnet was born in 1890 and was graduated from Tulane University in 1916. His specialty was obstetrics and gynecology.

J. R. BRYCE, M.D., 1873-1954

J. R. Bryce, M.D., Kiowa county's first practicing physician and a pioneer teacher of Jackson county, died March 12 after a long illness.

A native of Georgia, he came to Oklahoma in 1888. He practiced at Mountain Park and Snyder before retiring in 1943.

JULIAN FEILD, M.D., 1884-1954

Julian Feild, M.D., pioneer Enid physician, died March 16 in an Enid hospital. He had been in ill health since last summer.

Doctor Feild was born in Little Elm, Texas and came to Enid shortly after the opening of the Cherokee Strip in 1893. Doctor Feild attended Oklahoma University and graduated from Jefferson Medical College, Philadelphia in 1907. He retired from practice about seven months ago. He was active in medical and civic organizations and was a member of the First Presbyterian church, past president and charter member of the Enid Rotary club and past master of Enid Lodge No. 80 A. F. and A. M.

Surviving are his widow of the home, three daughters, two brothers and two sisters.

PAUL B. RICE, M.D., 1904-1954

Paul B. Rice, M.D., Oklahoma City, died March 22 after suffering a heart attack 10 days previously.

Doctor Rice was born in Lawton. He graduated from Oklahoma City University in 1925 and received his medical degree from the University of Oklahoma in 1938.

Prior to studying medicine, he taught high school and was athletic coach. He practiced for a short time in Antlers before coming to Oklahoma City in 1942.

He was a Mason and a member of the Methodist church.

He is survived by the widow of the home, two daughters, his mother and a sister.

THOMAS FLESHER, M.D., 1876-1954

Thomas Flesher, M. D., Edmond, died December 20, 1953, in an Oklahoma City hospital of acute leukemia.

Doctor Flesher was the subject of "Dr. Flesher Day" held two years ago in Edmond when nearly 400 persons turned out to honor him. He was presented with an O.S. M.A. Fifty Year Pin at that time.

Doctor Flesher was born February 10, 1876 in Reedsville, Ohio. He was graduated from Keokuk Medical College, Iowa (now the University of Iowa Medical School) in 1901. The following August he moved to Edmond and had practiced there since that time.

He was a member of the Masonic Lodge, a member of the board of the First Methodist church. He had served as city physician and was school physician at Central State College.

WILL C. WAIT, M.D., 1881-1954

Will C. Wait, M. D., McAlester, died January 20 following a heart attack suffered at the home of a patient.

Doctor Wait was the first prison physician in Oklahoma. He was superintendent for four years of the state reformatory for Negro boys. In 1935 he was named superintendent of the Oklahoma Tubercular Sanitarium at Clinton. He returned to McAlester in 1938.

Doctor Wait was born at Somerset, Kentucky May 20, 1881 and came to Pittsburg county in 1906 after graduating from the medical department of Central University in Kentucky.

(Continued on Page 146)

Meats-in-a-Can

and Kitchen-Cooked Meats... Comparative Nutritive Values

From a practical dietary standpoint, meats-in-a-can—preserved by commercial canning—are nutritionally interchangeable with meats of like variety prepared in the home.[1] For taste appeal, for economy and "keeping" quality, and for household convenience, meats-in-a-can are advantageous in many respects.

As the comparative data here shown indicate, kitchen-prepared meats and similar meats-in-a-can are closely alike in the amounts of various nutrients they provide

COMPARATIVE COMPOSITION OF KITCHEN-COOKED AND COMMERCIAL-CANNED MEATS
(Nutrient Amounts per 100 Grams)

	*Kitchen-Cooked Ham[2]	**Canned Ham[3] (Chopped, Cured)	Kitchen-Cooked Beef Round[2]	Canned Roast Beef[2]
Water	50%	50%	59%	60%
Protein	21 Gm.	20 Gm.	27 Gm.	25 Gm.
Fat (ether extract)	28 Gm.	20 Gm.	13 Gm.	13 Gm.
Niacin	4.0 mg.	4.3 mg.	5.5 mg.	4.2 mg.
Riboflavin	0.21 mg.	0.19 mg.	0.22 mg.	0.23 mg.
Thiamine	0.46 mg.	0.40 mg.	0.08 mg.	0.02 mg.

*Values after conversion from 42% to 50% water basis.
**Values after conversion from 58.69% to 50% water basis.

Experimental studies have shown that the processing which meats-in-a-can undergo leads to little if any greater vitamin losses than does home-cooking of similar cuts of meat. In general, meats-in-a-can retain of their original vitamin content approximately:

60 to 80 per cent of thiamine
90 to 100 per cent of riboflavin
90 to 100 per cent of niacin
80 per cent of biotin
70 to 80 per cent of pantothenic acid.[4,5]

During storage for customary periods, at usual warehouse temperatures, meats-in-a-can show little, if any, further vitamin loss except in thiamine. Even thiamine, a highly thermolabile vitamin, was 52 per cent retained in pork-in-a-can after ten months' storage at 80° F. Retention of the vitamin was notably greater when the canned pork was stored at 38° F.

Since meats-in-a-can are thoroughly cooked in processing, they may be consumed as purchased, merely warmed or mildly cooked. When the meat is moderately cooked in preparation for consumption, little or no further loss in vitamins need to occur.

Recent studies show that meats-in-a-can are excellent sources of needed amino acids.[6] The 18 amino acids determined in these studies appeared in similar ratio and amounts in canned beef, pork, and lamb as in the respective fresh or home-cooked meats.

1. Howe, P. E.: Foods of Animal Origin, Handbook of Nutrition, American Medical Association, ed. 2, Philadelphia, The Blakiston Company, 1951, p. 637.

2. Watt, B. K., and Merrill, A. L.: Agricultural Handbook No. 8, United States Department of Agriculture, 1950.

3. Schweigert, B. S.; Bennett, B. A.; Marquette, M.; Scheid, H. E., and McBride, B. H.: Food Res. *17*:56 (Jan.) 1952.

4. Rice, E. E., and Robinson, H. E.: Am. J. Pub. Health *34*:587 (June) 1944.

5. Schweigert, B. S.: Am. Meat Inst. Foundation, Circular No. 8, Nov. 1953.

6. Schweigert, B. S.; Bennett, B. A.; McBride, B. H., and Guthneck, B. T.: J. Am. Dietet. A. *28*:23 (Jan.) 1952.

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Medical Societies Around the State

Okmulgee-Okfuskee

R. M. Bird, M. D., Oklahoma City, associate professor of medicine at the University of Oklahoma School of Medicine, was a recent speaker at the Okmulgee-Okfuskee Medical Society when it met in Henryetta. Doctor Bird spoke on "Treatment of Leukemia."

Present at the meeting were the following physicians: Bob Alexander, Carlton E. Smith, Sam Leslie, John W. Deaton, I. W. Bollinger, M. L. Whitney, M. L. Peter, S. B. Leslie, A. S. Melton, G. Y. McKinney, W. C. Jenkins, C. M. Ming, Ted Clements, A. L. Buell (President), Jack P. Myers and R. D. Mercer.

Craig-Ottawa

Officers were elected at a meeting of the Craig-Ottawa Society held in Miami. Officers are J. M. McMillan, M. D., Vinita, President; Eugene Highland, M. D., Miami, Secretary; and Kenneth Lane, M. D., Vinita, Vice-President.

Caddo

New officers of the Caddo County Society elected at a meeting held at the Anadarko Hospital are: E. T. Cook, Jr., M. D., President; Burl Stone, M. D., Secretary; both of Anadarko; and W. L. Dickson, M. D., Cement, Vice-President.

Eleventh District

The annual dinner meeting of the 11th Councilor District was held recently in Durant. John McDonald, M. D., O.S.M.A. President, discussed medical problems at the state and national level. The scientific program was presented by William E. Barnett, M. C., Dallas, who spoke on "Cardiac Arrhythmias". Alfred Baker, M. D., Durant, Councilor, presided at the meeting.

Deaths

(Continued from Page 144)

WILLIAM ALLISON MORELAND, M.D., 1877-1954

William A. Moreland, M.D., pioneer Idabel physician, died February 26 after a four weeks illness.

Doctor Moreland was born May 23, 1877, at Elligay, Ga., and had resided in Idabel since 1903. He was a graduate of the University of Chattanooga, Tenn. Doctor Moreland was a veteran of World War I. He was a charter member of the Idabel Legion post, a member of the Baptist church, a Mason and a Shriner.

He is survived by the widow, two brothers and a sister.

E. L. COLLINS, M.D., 1873-1954

E. L. Collins, M. D., for 55 years a practicing physician in Panama, Okla. died March 1 at the age of 81.

Doctor Collins was born in Gasper, Ala. November 7, 1873, and settled in LeFlore county soon after his graduation from the University of Alabama School of Medicine.

Doctor Collins was active in medical organizations, was treasurer of the school board for 46 years, and a member of the Lions Club.

VIRGIL BERRY, M. D., 1866-1954

Virgil Berry, M.D., Okmulgee, died March 10 after a two year illness.

Doctor Berry was born March 14, 1866, at Salem, Ind. Following his medical education, he practiced in Salem for a time, later moving to Springfield, Ill. He moved to Wagoner and later to Wewoka. He moved to Okmulgee in 1909. He served in the army Medical Corps in World War II.

Four children, one brother and three sisters survive.

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Book Review

THE TURNING OF THE TIDES. Paul W. Shafer and John Howland Snow. The Long House Publishers, Inc., P. O. Box 1103, Grand Central Annex, New York 17, N. Y. 1953.

This little volume of 187 pages and a workable index dealing with the philosophy of education, is most significant. It has to do with our individual liberty and the freedom of our country. To physicians, whether or not they have children, its significance is obvious.

Without freedom of thought and action, medicine cannot function efficiently.

It is a documented statement of the socialistic, collectivist movement in our schools which amounts to a subtle blow to the future integrity of our government and our American way of life. The book should be read by every literate citizen of the United States and explained to every illiterate individual who can appreciate the security provided by our Constitution and the Bill of Rights.

For a period of approximately 50 years, organized advocates of the Bismarckian socialistic code developed in Germany and the similar Fabian philosophy in Great Britain have insidiously and artfully invaded our schools with their dangerous doctrines and destructive motives.

The opening paragraphs give an account of a meeting in New York City in a loft above Pecks Restaurant, on September 12, 1905, for the organization of the Intercollegiate Socialist Society. Two pages over we find that John Dewey, progenitor of progressive education, had organized the Progressive Education Association and the American Association of University Professors.

With these and other organizations in operation, the story runs through three parts with crescendo trends toward socialism with the hopeful turning of the tides as portrayed in the fourth part.

Is it not time for the American people to rise up and protect themselves and their children by swelling the "turning tide" and engulfing the ominous movement in a powerful undertow.

Our sovereign freedom is our children's birthright. Indifference and procrastination at this time may rob them of the priceless gift of personal liberty.

This is not the first time we have faced danger. Our chief danger is procrastination. The words of John Adams, *Boston Gazette,* 1763, seem approriate:

"The true source of all our suffering has been our timidity. Let us dare to read, think, speak and write. Let every order and degree among the people arouse. Let the pulpit resound. Let the bar proclaim. Let every sluice of knowledge be opened and set a-flowing."

Let every good American read the book, check conditions in his own community and act accordingly. — *Lewis J. Moorman, M.D.*

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History of Medicine

INDIAN OBJECTS *in a* CLEVELAND MUSEUM

HOWARD DITTRICK, M.D.

The Oklahoma State Medical Association has undertaken a most praiseworthy project of gathering together archives and materials that make up the story of medicine in Oklahoma. This problem comprises not only the experiences of pioneer physicians, an endeavor common to the history of all states, but also an unusual tale, that of primitive medicine among some of the western Indian tribes. I am unable to supply the secretary with any information or material relating to the Indians of Oklahoma. Perhaps a description of some Indian customs and possessions connected with our museum may suggest methods of further exploration.

A worthwhile magazine, published in Santa Fe and called El Palacio, frequently contained references to Indian Medicine. For example, mention was made of bandages for the head and splints for fractures, the latter made of reeds woven together. A method of reducing a dislocated hip was rather amusing. A lean and lanky horse was deprived of water for several days. The patient with the dislocation was then placed on its back and his feet were tied together under the horse's belly. The horse was then urged to drink water freely. Pressure outward and downward had a corrective effect on the dislocation. Flint knives were used to open an abscess of the breast and dried grasses were inserted for drainage. In many natural history museums collections of bags used by the Medicine Man reveal strange superstitions.

Among our possessions is a figurine coming from Arctic Siberia, made of walrus ivory. It can be disjointed beneath the arms and bits of hair or clothing belonging to the sick patient, introduced. The shaman in an effort to transfer the disease from the patient, leads in a ritualistic dance about the doll.

One of the Haida Indians in British Columbia carved a figure in black slate. The posterior surface represents a patient presumably consulting one of his deceased ancestors. On the anterior surface he appears to have recovered from his illness, although his leg has been amputated and he is wearing a crutch.

The Ojibways of Ontario are represented by a wood rack in which the papoose was securely bound, the rack then being attached to the mother's back. Another method of transporting the baby was in a basket made of birch bark, the baby being held in the basket by means of buckskin laced together with leather tongs.

Ohio had its own tribe, the Mound Builders. We have a skull from a member of this tribe, with a magnificent set of teeth. A display of flint knives and other instruments that came from Ohio's Flint Ridge was presented to the Museum by the Ohio State Museum in Columbus.

In Oklahoma you are probably familiar with many Navajo examples of Indian Medicine. The doll that is secured in the Ojibway rack has the features and dress of a Navajo baby. Another fetish, made of a specially shaped stone was handed down from father to son. It is dressed as a child with decoration of mother of pearl, turquoise, beads and bird feathers. It was given a place of honor in the home, and in return good health was ensured to all the family.

The San Blas Indians of Panama hung fetishes over the head of the patient's bed to keep away evil spirits. Two such figures are of carved wood. In driving away these evil influences the Medicine Man employed music from drums and flutes. A drum that was used for this purpose is one of our treasures. It appears that the Scotch attempted to establish a colony among the San Blas, and when this was disbanded, before 1800, the Scotch physician remained behind

(Continued on Page 152)

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	Mild	*Moderate*	*Total*
Streptomycin	0	0	0
Dihydrostreptomycin	12	3	15
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**Heck, W.E.; Lynch, W.J., and Graves, H.L.: Acta oto-laryng. 43:416, 1953.*

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'Medicine And You' Is Panel Topic

Panel discussions on "Medicine and You" are being sponsored by the Oklahoma County Medical Society and the Oklahoma City Libraries. Offered free as a public service, the discussions are held each Tuesday in the Oklahoma City Main Library. Oklahoma County Medical Society members participate in the discussions.

Topics which have been or will be discussed are "You and Blood Pressure," "You and Nerves," "You and Anesthetics," "You and Drugs," "You and Headaches," and "You and Allergies."

The seven member medical committee who helped outline the experimental series is: Tullos O. Coston, M. D., Chairman, C. M. O'Leary, M. D., R. Q. Goodwin, M. D., Richard E. Carptenter, M. D., R. Gibson Parrish, M. D., George S. Bozalis, M. D., H. V. L. Sapper, M. D., and Henry G. Bennett, Jr., Society President.

Newcomers To Tulsa Get Medical Care Facts

The Tulsa County Medical Society has prepared a "welcome to new-comers" pamphlet. A copy is mailed direct from the Society to each new resident of the city.

The top of the first page is ornamented by a caduceus, followed by a simple welcome message which includes the following: "We hope that we can, with the information contained in this folder, help to dispel some of the confusion which you may encounter as a new resident of Tulsa—particularly in regard to medical and hospital care."

The second page, under the head of "Medical Services," gives the number of physicians, with an approximate number of general practitioners and specialists; laboratories, both pathologic and x-ray, etc. Also the number of hospitals, general and otherwise, listing their facilities, etc.

On the third page, advice on how to select a doctor is offered. Early selection is advised, whether or not one is immediately needed, and the advantages of early contact —and offering the help of the society in selecting a doctor, if desired.

There is also a paragraph on voluntary hospital and medical care plans, including Blue Cross and Blue Shield. Information is presented about how to transfer membership and how to enroll.

On the back page is "A Word About Fees," the advisability of discussing them in advance with the physician and procedure if it is felt the fee is our of line—and at the bottom of the page is a statement as to the make-up of the Society.

History of Medicine

(Continued from Page 150)

to care for the sick. The Indians became attached to him and after his death made a wood effigy of him, with the features and kilts of a Scot. This fetish attained a high polish from often being applied to affected areas of sick members of the tribe.

Two reproductions from the Museum of Middle American Research have medical significance. One shows a Mayan woman who is a decided hunchback. The other is a stamped figure, used in some ceremony in connection with childbirth. A Cleveland dentist made some dental inlays for the Museum similar to those of jade, obsidian and gold displayed in the National Museum in Mexico City.

Our largest display of Indian material dates from the pre-Columbian period and represents the art of pottery among the Colombian, Peruvian and Mexican tribes. Some of the pieces were buried with the dead, others were evidently used as votive offerings. Nearly all of these terra cottas represent pathologic conditions. Many of the figures are characteristic of the hunchback, due to tuberculosis of the spine. Diseases of the skin are represented as yaws, syphilis, and mycosis fungoides. Other figures show idiocy, cirrhosis of the liver, goiter, epilepsy, rickets, and pain in various parts of the body.

The list of many of the Indian objects in the Cleveland Museum has been enumerated in the hope that it may prove helpful by pointing out types of material that may be discovered and that may throw some light on the Indian influence on the History of Medicine in Oklahoma.

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